

REPORT  
ON  
THE SANITARY CONDITION  
OF  
LEEDS,

FOR THE YEAR 1871,



*BY M. K. ROBINSON, M.D.,*

MEDICAL OFFICER OF HEALTH FOR THE BOROUGH OF LEEDS.

LEEDS :

PRINTED BY CHARLES GOODALL, PARK LANE.

1872.

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THE  
SANITARY CONDITION  
OF LEEDS.

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TO THE SANITARY COMMITTEE OF THE TOWN COUNCIL  
OF THE BOROUGH OF LEEDS.

GENTLEMEN,

During the year ending December 31st, 1871, the number of deaths registered in the Borough of Leeds was 6,881, being 452 less than in the preceding year.

The births numbered 10,401, or 38 less than those in 1870, and yielded 3,520 as last year's natural increase of population.

The death-rate for the past year was 26·4 per 1,000, being 1·8 per 1,000 less than that of 1870. The average ratio of the last five years has equalled 26·8 per 1,000 per annum, contrasted with 31·3, the average rate of the previous five years, so that if we compare the latter half with the former of the decenniad 1862-1871, it is manifest that a great improvement has taken place, which vantage ground gained,

however, should only stimulate to renewed effort in order to obtain a still further reduction in our annual mortality, for it cannot be denied that there is scope for still greater achievement in this direction.

Of males the number of deaths registered was 3,573, that of females being 3,308. By reference to the age columns in the general table it will be seen that the mortality was as usual, largely made up of children's deaths, in fact 47·3 per cent. of the total deaths occurred under five years of age, the proportion under one being 31·2 per cent. The weekly death wave ranged from 95 in the 26th and 27th weeks, each respectively, with a rate of 19·0 per 1,000, to 213 in the 37th week, or a rate equal to 42·6 per 1,000 per annum.

The third quarter was the most fatal one of the year, more than 26 per cent. of the deaths during that period being caused by diarrhoea.

The deaths occurred in the following districts of the Borough :--

DISTRICTS.		First Quarter	Second Quarter	Third Quarter	Fourth Quarter	TOTALS	Death-rate per 1000.
Leeds Town-ship.	North.....	376	348	524	409	1657	33·2
	West .....	386	349	420	378	1533	25·1
	South .....	227	160	263	184	834	28·6
Hunslet .....		239	235	318	226	1018	27·0
Holbeck ... ..		155	110	123	110	498	24·9
Wortley .....		169	161	178	215	723	23·0
Kirkstall .....		77	73	79	74	303	21·5
Bramley .....		37	43	56	52	188	18·8
Chapelton .....		35	30	25	33	123	16·6
Hamlets .....		1	...	2	1	4	10·2
BOROUGH.....		1702	1509	1988	1682	6881	26·4

The Leeds Workhouse and the House of Recovery, both of which institutions are in the North Registration District, contributed 258 deaths, and if this number be omitted the rate for the district would be reduced to 28·0, and again deducting the 210 deaths, which occurred in the Infirmary, the reduced rate for the West District would be represented by 21·7.



The following table shews the number of deaths referred to zymotic diseases during the last six years.

DISEASES.	1866	1867	1868	1869	1870	1871
Small Pox .....	59	46	17	42	9	41
Measles .....	219	28	95	26	179	92
Scarlatina .....	98	71	181	337	339	108
Diphtheria .....	27	28	28	18	23	20
Croup .....	98	71	81	49	44	38
Whooping Cough.	242	168	79	75	187	146
Fever, including Typhus, Enteric, Relapsing, and Continued Fever	490	257	314	237	345	341
Diarrhœa .....	428	407	739	414	657	663
Other Zymotics ...	84	81	97	92	106	89
TOTALS.....	1745	1157	1631	1290	1889	1538

Small pox, which has never been entirely absent for a whole year since my official connexion with Leeds, has been lately a cause of considerable anxiety on account of the epidemic prevalence of the disease in so many large towns. During last year, 47 out of the 289 cases which came under notice were imported from other towns, and if active sanitary measures had not been adopted by your Committee in these cases, it is reasonable to presume that the epidemic would have assumed far more formidable proportions than it has hitherto done in Leeds, as, notwithstanding the praiseworthy exertions of the Poor Law Guardians, it is quite certain that careful vaccination, and re-vaccination require to be more vigorously practised in order that the protective power resulting from this operation may be extended to the entire population. It is no argument to say because persons contract the disease after vaccination has been resorted to that vaccination is no protection, for it must be remembered that the exception sometimes proves the rule, and even small pox may occur a second time in the same individual, yet no one doubts the immunity begotten by a first attack against a second one; and again, allowance must also be made for faulty or careless vaccination. The numerous statistics and reports already published have sufficiently established the

value of vaccination, but it is instructive to note that of the 41 persons killed by small pox last year in Leeds, 31 had not been vaccinated, 3 imperfectly so, in one instance it was not ascertained whether the operation had been performed or not, whilst in the remaining six, vaccination was believed to have been performed. It is lamentable to have to report how the disease was spread either by the ignorant or careless exposure of persons suffering from the malady, or through the medium of infected clothing. It is not always an easy matter to trace the connexion of one case with the other, but in 225 instances of persons suffering from the malady, the history of communication with previously infected sources was completely established.

The epidemic, still prevalent, has been widely distributed throughout the Borough, the North Registration District as yet, furnishing the largest number of cases; here it has prevailed chiefly in the streets bounded by Quarry Hill, Burmantofts Street, Green Road, and Mabgate, also the streets bounded by Beckett Street, Cardigan Street, Cherry Row, and Green Road, in Arthur Street, Arthur Terrace, Brown Square, Cross Templar Street, Galway Street, Gough Street, Grey Street, High Street, Hope Street, Lumb Square, Mushroom Street, Nelson Street, Nippet Street, Pilot Street, Shakespeare Street, Saville Green, Templar Street, and York Street. Cases also occurred at Bath Street, Catherine Street, Cookson Street, East Street, Joy Fold, Courts and Yards in Meadow Lane, Providence Street, Richmond Road, Richmond Street, Woodman Terrace, and Zion Street in the South-East District; at Back Barrack Street, Blenheim Terrace, Briggate, Burley Street, Carlton Cross Street, England Street, Glover Street, Meanwood Road, Primrose Street, Park Lane, Portland Crescent, Reuben Street, Wellington Street, and Woodhouse Street in the West District; at Anchor Street, Ebony Street, Garr Street, Hunslet Road, Jack Lane, and Pottery Field in Hunslet District; at Frost Fold in Holbeck; at Bradley Yard, Stanningley, and Grammathorpe in Bramley District; at Cardigan Place, Eddison's Buildings, and Spring Grove Avenue in Kirkstall; and at Smith's Buildings, Chapel-Allerton.

Scarlatina, one of childhood's special enemies, was less fatal during 1871 than it has been for many years, the deaths

registered numbering 108. The history of 85 of the subjects of these deaths revealed the contagious link in the connecting chain of one case with another.

The following table shews the deaths registered under the different forms of fever during the last six years, and by reference to the map in the Appendix it will be seen where the cases of fever which came under notice last year were distributed.

	1866	1867	1868	1869	1870	1871
Typhus .....	407	221	170	134	131	101
Enteric .....	73	31	143	100	182	205
Relapsing .....	...	...	...	1	13	...
Continued .....	6	...	...	1	13	11
Remittent .....	4	...	...	1	3	21
Puerperal .....	...	3	1	...	3	3
TOTAL .....	490	255	314	237	345	341

The above table exhibits the still further decline of typhus, but at the same time it will be seen that enteric, or filth fever, has increased; in 138 instances of the persons who succumbed to the disease the drainage of the houses where the victims had lived was found defective, and in 81 other cases privies adjoined the houses. These facts will help to strengthen the hands of the Committee in the work they have undertaken of filling up the middensteads (sepulchres of filth) which have so long required extinction. The arrears of defective drainage are seriously increasing, and it is becoming a matter of the first importance to obtain a removal or relaxation of the Chancery Injunction.

In 26 of the deaths from typhus the subjects of them were imported into Leeds from other towns, and 95 had previously held communication with infected sources. In addition to the




341 deaths registered, 511 persons suffering from fever were reported; 246 of these lived where the drainage was found defective, 158 dwelt next to privies, 61 had been exposed to contagion, 16 came from other towns, and 13 were the occupants of cellar dwellings.

The following were the localities visited by fever, viz. :—  
 In the North Registration District, the streets bounded by Accommodation Road, Burmantoft's Street, and York Road; streets bounded by Duke Street, Marsh Lane, and Quarry Hill; streets bounded by Burmantofts Street, Green Road, Mabgate, and Quarry Hill; streets bounded by Kirkgate, Lady Lane, Vicar Lane, and York Street; together with Alan Terrace, Arthur Street, Back Nile Street, Bertie Street, Cambridge Street, Hope Street, Lower Templar Street, Pollard Street, Primrose Street, Regent Street, and Stamford Street. In the South-East District, Bath Street, Lawrence Street, Mayor Street, Morpeth Street, Providence Street, Richmond Road, Rodney Street, Shannon Street, Saxon Lane, Upper Cross Street, Vincent Street, Woodman Terrace, and Weaver Square. In the West District, Baker Street, Benns Square, Bingley Street, Calvert Court, Corporation Street, Clarence Street, Dover Street, Forrest Street, Institution Street, Portland Street, Sackville Street, Stanhope Street, and Well's Yard. In Hunslet, the streets off Dewsbury Road, streets and yards in Pottery Field, streets and yards out of Waterloo Road, along with Alton Street, Branston Street, Coupland Street, Grape Street, Holdsworth Street, Low Road, Nevin Street, and Vine Street. In Holbeck, Ashley Place, Catherall Street, Charlotte Street, Derby Street, Isles Lane, Moor Side, and Provost Street. In Wortley, at Atkinson Place, Baptist Street, Bruce Street, Copley Hill, Langham Street, New Street, Wellington Road, Upper and Lower Wortley. In Armley, at Botany Bay, Canal Road, Far Fold, Main Road, Moor Side, Station Road, and Winker Green. In Farnley, at School Close. In Bramley, at Bradley Hill, Dickenson's Hill, Elm Row, Elswick Terrace, High Street, Hough End, Lumb Row, Smith Row, White Cote, and Waterslacks. In Kirkstall, at Alexandra Terrace, Ash Terrace, Cross Church Street, Commercial Street, Lloyd Street, Owen's Houses, St. Stephen's Terrace, St.

Ann's Row, Springfield Place, Tordoff Terrace, White Row, and Wellburn Yard. In Chapel-Allerton District, at Cowper Street, Henconner Lane, Moortown, Newton Grove, Union Place, and York Terrace.

Diarrhoea was again the principal zymotic of the year, killing more than any other one disease excepting bronchitis. Defective sanitary arrangements existed in 525 instances at the dwellings where these cases occurred consisting of either faulty drainage or improper excrement disposal. 451 of the deaths from diarrhoea occurred in children under one year of age, and 317 were not nursed by their mothers, but brought up by hand feeding. The parents of 27 of the children were intemperate in their habits, of 17 they were destitute, and of 18 both intemperate and destitute. Causes instrumental in the development of typhoid fever, have long been considered by sanitarians capable of producing diarrhoea under different circumstances, as such may be favourable to the production of one or the other disease. It is well known that a certain temperature is essential before this summer visitant can exert its fatal force on infant life. Just as the fungi spores lay dormant and concealed a greater part of the year, until under the influence of genial heat, the green sod becomes clothed with the white caps of the parent plant, so this annual epidemic casts its white shroud over infant existence in the sunny days of summer. The fact that the history of 525 cases last year points to the relationship of filth with this malady suggests the importance of removing all sources of impurity from contiguity to human habitations. The effect of rain is to wash the atmosphere, cleanse the streets and sewers, &c., and thus check the prevalence of diseases like diarrhoea, which probably depend on impurities (at any rate as a pabulum) for their existence.

*Printed for*  *J. W. M. & Co.*

The following table shews the weekly deaths from Diarrhoea, together with the temperature and rainfall during the third quarter :—

WEEK ENDING		Deaths from Diarrhoea	Mean Temperature	Amount of Rainfall
July	8th .....	5	56·9	1·59
„	15th .....	3	59·2	0·83
„	22nd .....	6	61·3	0·30
„	29th .....	23	56·9	0·66
August	5th .....	24	56·6	0·15
„	12th .....	41	66·1	0·09
„	19th .....	68	63·7	0·54
„	26th .....	76	58·9	0·45
September	2nd .....	59	60·6	0·56
„	9th .....	59	56·9	1·39
„	16th .....	78	57·7	0·13
„	23rd .....	48	51·7	0·04
„	30th .....	41	48·4	3·53

The total deaths from zymotic diseases numbered 1,538, or 22·4 per cent. of the total deaths; affections of the respiratory organs, excluding phthisis, amounted to 1,210; of uncertain seat, 214; tubercular diseases, 886; affections of the brain and spinal cord, 814; diseases of the circulatory system, 330; of the stomach, liver, &c., 250; of the kidneys, 107; child-birth and diseases of the uterus, 61; diseases of the skin, cellular tissue, &c., 23; debility, atrophy, and marasmus, 408; developmental diseases, 227; old age, 247; inquests, deaths from violence, and sudden deaths, 295; and the remainder, 271, from causes not specified.

The foregoing is a summary of the different causes of deaths in the register for 1871. Typhoid fever figures far too largely in the record, and contagious diseases were spread to a fearful extent on account of the defective powers for procuring isolation in these cases, the waste of life in consequence is a question deserving the serious consideration of our legislators. As the law exists at present, the Town Clerk is of opinion that the Council have power to build hospitals, but none to supply medicine and attendance, &c., nor has the Council power of compulsory removal to such hospitals,



except the sufferers are without proper lodging or accommodation, or members of more than one family; therefore, for the purpose of securing isolation, the law on this subject is defective, except in the case of such as would probably come under the head of paupers. In the event of an Epidemic Hospital being built for all classes, as contemplated by your Committee, the suggestion of Dr. Eddison, that an arrangement be made to permit medical gentlemen to attend their own patients when removed to such institution, would render it more generally available, as there is often a natural indisposition on the part of persons to lose the services of their own medical advisers.

It would occupy too much space in this report to give a detailed account of the devastations produced from the extension of infectious diseases through the ignorance or recklessness of persons having charge of the sick. Previous communication with infected sources was discovered to have existed in 95 out of the 341 deaths from all forms of fever, in 74 out of the 92 deaths from measles, in 85 out of the 108 deaths from scarlatina, and in 30 out of the 41 deaths from small pox registered last year in Leeds.

Two or three instances taken from my notes of the history of the present epidemic of small pox will illustrate the general mischief occasioned by disregard to the communicability of the disease. A woman proceeded from Leeds to Wakefield to nurse a man suffering from small pox, this man died, and the woman brought the bed home with her, on which the man had laid, to Duce Square, Wortley, and on it placed the child of a man who was lodging with her; this child very soon suffered from small pox, and two other men and a woman, frequenters of this house, subsequently sickened from the disease. Another woman, living in Pollard Street, whose two children had been afflicted with small pox, gave the bed on which they had laid to three boys; these boys, all members of different families, carried the bed to the top of Mabgate, and there made a bonfire of it. Each of these boys contracted small pox, and subsequently it was communicated to several members of their respective families. A man from Woodhouse visited at a house in Primrose Street, where a convivial gathering was being held; the man having imbibed

rather freely, fell asleep, when the mistress of the house took a pillow, upon which a child, afflicted with small pox, was reclining, and placed it under the head of the slumbering man. This man soon contracted the disease, and subsequently a brother, who slept with him, also suffered.

It is gratifying to turn from the catalogue of deaths to a review of the sanitary work accomplished in 1871, otherwise an impression might be created that the enemies to human life had been quietly allowed to take the citadel whilst its defenders slept.

The following return shews that the duties of the Committee performed in the administration of the Nuisances Removal and Sanitary Acts, have been neither few nor trivial.

Notices and Letters issued ... ..	17,137
Cottage houses visited with the object of improving their sanitary condition .. ..	20,314
Houses limewashed .. ..	19,978
Houses disinfected ... ..	1,635
Articles disinfected at the dry heat apparatus ... ..	5,023
Overcrowded houses partially emptied ... ..	97
Offensive midden sumps filled up ... ..	75
Privies converted into box system ... ..	156
Miscellaneous nuisances removed ... ..	16,642
Diseased beasts destroyed ... ..	3
„ pigs „ ... ..	8
Unsound rabbits „ ... ..	190
„ fish „ ... ..	12 6
Summonses issued ... ..	60
Orders made by Magistrates ... ..	49
Penalties inflicted ... ..	£73 16 6

Foremost in magnitude as a sanitary undertaking, and one which will render the year 1871 memorable in the sanitary annals of Leeds, was the determination by your Committee to purchase and destroy that whole block of unwholesome dwellings situated off Kirkgate, in one of the most densely populated, and unhealthy districts of the Borough, containing 10 cellar dwellings, and comprising 93 houses, followed by a like decision to demolish property of an equally objectionable character, situated between Back George Street, Nelson Street, and Millgarth Street, containing 20 courts, 46 cellar dwellings, and comprising 200 houses.



A work of no less importance was commenced when the reeking midden received its formal condemnation, and your Committee undertook to enforce the extinction of all ashpits in the East Ward, a project long needed in the whole Borough, but none the less welcome to all enlightened sanitarians.

Last year witnessed also the erection of a new and spacious disinfecting apparatus, where sufficient heat is generated, and additional disinfectants can be applied. The Committee have also had under their consideration the subject of providing public baths and washhouses, together with the erection of a permanent Epidemic Hospital to be adapted for all classes of patients.

The Streets and Sewerage Committee has recently been animated to renewed exertions in prosecuting the work of ventilating the sewers, and if the Building Clauses Committee could be induced to expunge the bye-law which permits the building of back to back houses, still further sanitary progress would be made.

The following is a return respecting lodging houses, obtained for the Lodging House Committee, for 1871 :—

Number of common lodging-houses under the Act, 1851	103
Number of lodging-houses under the Sanitary Act, 1866	29
<b>TOTAL</b> ... ..	<b>132</b>
Number of lodgers the houses are registered to accommodate per night	1,491
Average per house	11
Average number of lodgers per night	1,187
per house	9
Total number of lodgers per year	433,255
Number of visits paid to the houses by the Committee	177
Number of visits paid to the houses by the Officers. Day	33,009
Number of visits paid to the houses by the Officers. Night	16,017
<b>TOTAL</b> ... ..	<b>49,203</b>
Number of persons suffering from infectious disorders removed to the Fever Hospital	14
Number of deaths from all causes at the houses	26
Fresh houses registered last year	21
Registers withdrawn	2
Lodging house-keepers cautioned for breaches of the regulations	19
Lodging house-keepers summoned	9

A great number of these houses are totally unfit for occupation as such, and there is ample scope for the development of a company for the purpose of building Model Lodging Houses to be constructed on sound sanitary principles. The Social Improvement Society, which has done so much good as a truly philanthropic association, might take this matter up, and if no actual commercial profit could be realised, a real benevolent work might be developed without much risk or loss.

The following is a return of the number of observations and summonses issued by Inspector Sands, together with the convictions, &c., obtained by the Town Clerk under the Smoke Prevention Clauses of the Improvement Act, 1866 :—

Observations.	60 minutes' Observations.	Total Summonses Issued.	Convictions Obtained.	Summonses Dismissed or Withdrawn.	Amount of Penalties imposed by Justices.
1025	88	28	24	4	£53 0 0

The accompanying tables and maps, being each designated, need no explanation.

I am,

Gentlemen,

Your obedient Servant,

M. K. ROBINSON, M.D., &c.,

*Officer of Health.*

*January 14th, 1872.*

MONTHLY METEOROLOGICAL TABLE  
FOR THE YEAR ENDING DECEMBER 31<sup>ST</sup>, 1871,

*Taken at the Philosophical Hall, by*

LOUIS C. MIALI, ESQ.

M O N T H 1871	Mean Readings of Barometer	Mean Tempera- ture of the Air	Mean Tempera- ture Dew Point	Most Prevalent Wind	Amount of Rainfall
January.....	29·618	33·4	29·1	N.W.	0·66
February .....	29·769	42·1	39·2	N.W.	1·09
March .. ....	29·832	45·3	38·4	N.W.	0·43
April .....	29·620	45·9	40·8	N.E.	3·15
May .....	29·938	52·8	43·2	N.W.	1·00
June .....	29·795	54·5	51·0	N.E.	4·08
July .....	29·632	60·0	55·7	S.W.	3·22
August .....	29·820	63·5	53·8	S.W.	0·99
September. . .	29·757	54·9	50·8	N.W.	5·57
October .....	29·763	49·8	44·2	S.W.	2·95
November.....	29·863	39·0	32·7	N.W.	0·75
December .....	29·873	40·2	34·7	S.W.	1·21

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CHARLES GOODALL, PRINTER, PARK LANE, LEEDS.

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WEEKLY REGISTER OF DEATHS IN THE BOROUGH OF LEEDS FOR 1871.

CAUSES OF DEATH.		1897.												1898.												1899.												1900.												1901.												1902.												1903.												1904.												1905.												1906.												1907.												1908.												1909.												1910.												1911.												1912.												1913.												1914.												1915.												1916.												1917.												1918.												1919.												1920.												1921.												1922.												1923.												1924.												1925.												1926.												1927.												1928.												1929.												1930.												1931.												1932.												1933.												1934.												1935.												1936.												1937.												1938.												1939.												1940.												1941.												1942.												1943.												1944.												1945.												1946.												1947.												1948.												1949.												1950.												1951.												1952.												1953.												1954.												1955.												1956.												1957.												1958.												1959.												1960.												1961.												1962.												1963.												1964.												1965.												1966.												1967.												1968.												1969.												1970.												1971.												1972.												1973.												1974.												1975.												1976.												1977.												1978.												1979.												1980.												1981.												1982.												1983.												1984.												1985.												1986.												1987.												1988.												1989.												1990.												1991.												1992.												1993.												1994.												1995.												1996.												1997.												1998.												1999.												2000.												2001.												2002.												2003.												2004.												2005.												2006.												2007.												2008.												2009.												2010.												2011.												2012.												2013.												2014.												2015.												2016.												2017.												2018.												2019.												2020.												2021.												2022.												2023.												2024.												2025.												2026.												2027.												2028.												2029.												2030.												2031.												2032.												2033.												2034.												2035.												2036.												2037.												2038.												2039.												2040.												2041.												2042.												2043.												2044.												2045.												2046.												2047.												2048.												2049.												2050.												2051.												2052.												2053.												2054.												2055.												2056.												2057.												2058.												2059.												2060.												2061.												2062.												2063.												2064.												2065.												2066.												2067.												2068.												2069.												2070.												2071.												2072.												2073.												2074.												2075.												2076.												2077.												2078.												2079.												2080.												2081.												2082.												2083.												2084.												2085.												2086.												2087.												2088.												2089.												2090.												2091.												2092.												2093.												2094.												2095.												2096.												2097.												2098.												2099.												2100.											
CLASS I.	Small Pox.....	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239	240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255	256	257	258	259	260	261	262	263	264	265	266	267	268	269	270	271	272	273	274	275	276	277	278	279	280	281	282	283	284	285	286	287	288	289	290	291	292	293	294	295	296	297	298	299	300	301	302	303	304	305	306	307	308	309	310	311	312	313	314	315	316	317	318	319	320	321	322	323	324	325	326	327	328	329	330	331	332	333	334	335	336	337	338	339	340	341	342	343	344	345	346	347	348	349	350	351	352	353	354	355	356	357	358	359	360	361	362	363	364	365	366	367	368	369	370	371	372	373	374	375	376	377	378	379	380	381	382	383	384	385	386	387	388	389	390	391	392	393	394	395	396	397	398	399	400	401	402	403	404	405	406	407	408	409	410	411	412	413	414	415	416	417	418	419	420	421	422	423	424	425	426	427	428	429	430	431	432	433	434	435	436	437	438	439	440	441	442	443	444	445	446	447	448	449	450	451	452	453	454	455	456	457	458	459	460	461	462	463	464	465	466	467	468	469	470	471	472	473	474	475	476	477	478	479	480	481	482	483	484	485	486	487	488	489	490	491	492	493	494	495	496	497	498	499	500	501	502	503	504	505	506	507	508	509	510	511	512	513	514	515	516	517	518	519	520	521	522	523	524	525	526	527	528	529	530	531	532	533	534	535	536	537	538	539	540	541	542	543	544	545	546	547	548	549	550	551	552	553	554	555	556	557	558	559	560	561	562	563	564	565	566	567	568	569	570	571	572	573	574	575	576	577	578	579	580	581	582	583	584	585	586	587	588	589	590	591	592	593	594	595	596	597	598	599	600	601	602	603	604	605	606	607	608	609	610	611	612	613	614	615	616	617	618	619	620	621	622	623	624	625	626	627	628	629	630	631	632	633	634	635	636	637	638	639	640	641	642	643	644	645	646	647	648	649	650	651	652	653	654	655	656	657	658	659	660	661	662	663	664	665	666	667	668	669	670	671	672	673	674	675	676	677	678	679	680	681	682	683	684	685	686	687	688	689	690	691	692	693	694	695	696	697	698	699	700	701	702	703	704	705	706	707	708	709	710	711	712	713	714	715	716	717	718	719	720	721	722	723	724	725	726	727	728	729	730	731	732	733	734	735	736	737	738	739	740	741	742	743	744	745	746	747	748	749	750	751	752	753	754	755	756	757	758	759	760	761	762	763	764	765	766	767	768	769	770	771	772	773	774	775	776	777	778	779	780	781	782	783	784	785	786	787	788	789	790	791	792	793	794	795	796	797	798	799	800	801	802	803	804	805	806	807	808	809	810	811	812	813	814	815	816	817	818	819	820	821	822	823	824	825	826	827	828	829	830	831	832	833	834	835	836	837	838	839	840	841	842	843	844	845	846	847	848	849	850	851	852	853	854	855	856	857	858	859	860	861	862	863	864	865	866	867	868	869	870	871	872	873	874	875	876	877	878	879	880	881	882	883	884	885	886	887	888	889	890	891	892	893	894	895	896	897	898	899	900	901	902	903	904	905	906	907	908	909	910	911	912	913	914	915	916	917	918	919	920	921	922	923	924	925	926	927	928	929	930	931	932	933	934	935	936	937	938	939	940	941	942	943	944	945	946	947	948	949	950	951	952	953	954	955	956	957	958	959	960	961	962	963	964	965	966	967	968	969	970	971	972	973	974	975	976	977	978	979	980	981	982	983	984	985	986	987	988	989	990	991	992	993	994	995	996	997	998	999	1000																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								





During the Year ending December 31st, 1871.

[illegible]





THE CROSSES REPRESENT THE PLACES WHERE CASES OF FEVER OCCURRED DURING 1871.





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THE CROSSES REPRESENT THE PLACES WHERE CASES OF SMALL POX OCCURRED DURING 1871.





